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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,105	09/19/2000	Robert W. Mason	LYON 0117 PUS	5382

22045 7590 05/21/2003

BROOKS & KUSHMAN  
1000 TOWN CENTER 22ND FL  
SOUTHFIELD, MI 48075

EXAMINER
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OH, TAYLOR V

ART UNIT	PAPER NUMBER
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1625

DATE MAILED: 05/21/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/664,105

Applicant(s)

MASON, ROBERT W.

Examiner

Taylor Victor Oh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Final Rejection***

**The Status of Claims**

Claims 26-53 have been rejected.

**Claim Rejections-35 USC 112**

1. Applicants' argument filed 3/5/03 have been fully considered but they are not persuasive.

The rejection of Claims 26-28, 31, 33, 37, 42, 46, 48, 50, and 52 has been maintained due to applicants' failure to modify in the amendment.

**Claim Rejections-35 USC 103**

Rejection of Claims 26-53 under 35 U.S.C. 103(a) as being unpatentable over Okawa (U.S. 5,166,414) in view of Kober et al (U.S. 3,366,662) in view of Faraj (U.S. 5,686,645).

The rejection of Claims 26-53 under 35 U.S.C. 103(a) as being obvious over over Okawa (U.S. 5,166,414) in view of Kober et al (U.S. 3,366,662) in view of Faraj (U.S. 5,686,645) is maintained for reasons of the record in paper no. 6.

***Response to Argument***

2. The applicants argue the following issue:

1. the prior art Okawa et al reference has failed to disclose any other carbonate and aromatic formamides in the process and ;
2. the Kober does not teach the reaction of formamides with dimethylcarbonate nor produce formamides;
3. there is no motivation to combine the prior art references since Okawa et al reacts a formamide with dimethyl carbonate, whereas Kober reacts an amine with an aryl carbonate ;
4. the Faraj does not react a formamide with an aryl carbonate, but teaches a reaction of a formamide with a dialkyl amine or alcohol to form an urea ;
5. the reaction does not proceed without a catalyst in the case of Okawa et al as shown in the Declaration;
6. an optimization is patentable unless the prior art teaches the particular means used to optimize the process .

The applicants' argument have been noted, but these arguments are not persuasive.

First, with regard to the first argument, the Examiner has noted applicants' argument. However, on the contrary to applicants' assertion, the prior art Okawa et al reference does indicate that that the prior art process makes it possible to produce aromatic diisocyanate compounds from aromatic diamine compounds (see col. 5, lines 3-5).

Second, regarding the second and third arguments, the Examiner has noted applicants' argument. However, the Kober has been used as the secondary reference to supplement the primary reference as to the use of 5-chloro-2,4-tolylene diamine in the production of isocyanates as the claims are directed to. Furthermore, the Okawa reference does teach the process of obtaining the isocyanate compound from reacting either a formamide compound or an amine compound with an organic carbonate, such as dimethyl carbonate in the presence of an alkali catalyst, producing a corresponding urethane, and further thermally decomposing the urethane compound to obtain the desired compound, whereas Kober et al do disclose the process of preparing isocyanates by reacting diphenyl carbonate with a diamine such as 5-chloro-2,4-tolylene diamine at a temperature of from 60<sup>0</sup> to 250<sup>0</sup> C. Their reaction processes share a common reaction mechanism with either dimethyl carbonate or diphenyl carbonate belonging to commonly known organic carbonates. Furthermore, The Okawa reference does indicate the equivalency between the use of formamide compound and the amine compound in the reaction process regardless of using any organic carbonate

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with any diamine since it is possible to produce aromatic diisocyanate compounds from aromatic diamine compounds. Therefore, there is a motivation to combine the references. Thus, it would have been obvious for the skillful artisan in the art to have motivated to incorporate Kober et al's diphenyl carbonate into the Okawa's process, thereby obtaining the desired product with an expectation of success as disclosed in the Okawa reference.

Third, regarding the fourth argument, the Examiner has noted applicants' argument. However, the Faraj has been used as the tertiary reference to supplement the primary reference for using the well-known 2,4-bis(N-formamide) of toluene diamine compound as a reactant in the production of isocyanate precursors. Therefore, this is relevant to the claimed invention.

Fourth, regarding the fourth argument, the Examiner agrees with applicants' assertion.

Fifth, regarding the fourth argument, the Examiner has noted applicants' argument. However, applicants are required to show an unexpected result by using the recycling process over the prior art reference. Until then, it would have been obvious to the skillful artisan in the art to have recycled phenol formate ester to form the organic formamide and the organic formamide to the reaction mixture with the organic di- or polyamine in the combined Okawa's process and Kober et al's process.

Therefore, all the rejections are maintained.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 703-305-0809. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alan Rotman can be reached on 703-308-4698. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-2742 for regular communications and 703-305-7401 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

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5/19/03

*Alan L. Rotman*  
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